

AMENDMENT OF SOLICITATION/MODIFICATION OF CONTRACT				1. CONTRACT ID CODE N/A		PAGE 1 OF PAGES 31	
2. AMENDMENT/MODIFICATION NO. 0005		3. EFFECTIVE DATE 11 OCT 01		4. REQUISITION/PURCHASE REQ. NO. N/A		5. PROJECT NO. (If applicable) SPEC. NO. 1034/1189	
6. ISSUED BY		CODE		7. ADMINISTERED BY (If other than Item 6)		CODE	
DEPARTMENT OF THE ARMY U.S. ARMY ENGINEER DISTRICT, SACRAMENTO SACRAMENTO, CALIFORNIA 95814-2922				DISTRICT ENGINEER U.S. ARMY ENGINEER DISTRICT, SACRAMENTO 1325 J STREET SACRAMENTO, CALIFORNIA 95814-2922 ATTN: CONTRACTING DIVISION			

8. NAME AND ADDRESS OF CONTRACTOR (No., street, county, State and ZIP Code)		(✓)	9A. AMENDMENT OF SOLICITATION NO. DACW05-01-R-0030
		×	9B. DATED (SEE ITEM 11) 13 SEP 2001
			10A. MODIFICATION OF CONTRACTS/ORDER NO. N/A
			10B. DATED (SEE ITEM 13) N/A
CODE		FACILITY CODE	

11. THIS ITEM ONLY APPLIES TO AMENDMENTS OF SOLICITATIONS

☒ The above numbered solicitation is amended as set forth in Item 14. The hour and date specified for receipt of Offers ☐ is extended, ☒ is not extended.

Offers must acknowledge receipt of this amendment prior to the hour and date specified in the solicitation or as amended, by one of the following methods:

(a) By completing Items 8 and 15, and returning 1 copies of the amendment; (b) By acknowledging receipt of this amendment on each copy of the offer submitted; or (c) By separate letter or telegram which includes a reference to the solicitation and amendment numbers. FAILURE OF YOUR ACKNOWLEDGMENT TO BE RECEIVED AT THE PLACE DESIGNATED FOR THE RECEIPT OF OFFERS PRIOR TO THE HOUR AND DATE SPECIFIED MAY RESULT IN REJECTION OF YOUR OFFER. If by virtue of this amendment you desire to change an offer already submitted, such change may be made by telegram or letter, provided each telegram or letter makes reference to the solicitation and this amendment, and is received prior to the opening hour and date specified.

12. ACCOUNTING AND APPROPRIATION DATA (If required)

13. THIS ITEM APPLIES ONLY TO MODIFICATIONS OF CONTRACTS/ORDERS, IT MODIFIES THE CONTRACT/ORDER NO. AS DESCRIBED IN ITEM 14.

(✓)	A. THIS CHANGE ORDER IS ISSUED PURSUANT TO: (Specify authority) THE CHANGES SET FORTH IN ITEM 14 ARE MADE IN THE CONTRACT ORDER NO. IN ITEM 10A.
	B. THE ABOVE NUMBERED CONTRACT/ORDER IS MODIFIED TO REFLECT THE ADMINISTRATIVE CHANGES (such as changes in paying office, appropriation date, etc.) SET FORTH IN ITEM 14, PURSUANT TO THE AUTHORITY OF FAR 43.103(b).
	C. THIS SUPPLEMENTAL AGREEMENT IS ENTERED INTO PURSUANT TO AUTHORITY OF:
	D. OTHER (Specify type of modification and authority)

E. IMPORTANT: Contractor ☐ is not, ☐ is required to sign this document and return _____ copies to the issuing office.

14. DESCRIPTION OF AMENDMENT/MODIFICATION (Organized by UCF section headings, including solicitation/contract subject matter where feasible.)

**JET GROUT SECTIONS, CONTRACT 1/JET GROUT TEST
AMERICAN RIVER WATERSHED PROJECT (COMMON FEATURES), CALIFORNIA**

2 ENCLS

1) REVISED PAGES: 00700 - 179, 01506 (16 PAGES), 02730 (13 PAGES).

2) REVISED DRAWINGS AS INDICATED ON 00700 - 179.

Except as provided herein, all terms and conditions of the document referenced in Item 9A or 10A, as heretofore changed, remains unchanged and in full force and effect.

15A. NAME AND TITLE OF SIGNER (Type or print)		16A. NAME AND TITLE OF CONTRACTING OFFICER (Type or print)	
15B. CONTRACTOR/OFFEROR	15C. DATE SIGNED	16B. UNITED STATES OF AMERICA	16C. DATE SIGNED
_____ (Signature of person authorized to sign)		BY _____ (Signature of Contracting Officer)	

28	STAGING AREA AT STA. 3+520	
29	ORTHOPHOTO, SECTION L2	1
30	PLAN, SECTION L2	
31	DETAIL, SECTION L2	
32	DETAIL, SECTION L2	
33	ORTHOPHOTO, SECTION L2	
34	PLAN, SECTION L3	1
35	DETAIL, SECTION L3	
36	ORTHOPHOTO, SECTION L4 AND L4A	
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38	PLAN, SECTION L4 AND L4A	
39	DETAIL, SECTION L4	1
40	DETAIL, SECTION L4A	1
41	RIGHT BANK, SURVEY CONTROL POINTS	
42	CUTOFF WALL PROFILE, RIGHT BANK	
43	ACCESS TO SECTION R2	
44	ACCESS TO SECTION R2	
45	ORTHOPHOTO, SECTION R2	
46	PLAN, SECTION R2	
47	DETAIL, SECTION R2	1
48	R2 ACCESS ROAD REGRADING AND PRECAUTIONS	
49	INTER-CONNECTION BETWEEN SCB SLURRYWALL AND JET GROUT WALL	
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51	DETAIL FOR LIGHT RAIL JET GROUT WALL	1
52	DETAIL FOR RAILROAD CROSSING, SECTIONS L3 AND L4	
53	DETAIL FOR RAILROAD CROSSING, SECTION R2	
54	MISCELLANEOUS DETAILS	
55	ROAD SURFACING DETAIL	
56	MISCELLANEOUS DETAILS	
57	UTILITIES & CROSSINGS - POINTS OF CONTACTS- NOTIFICATIONS SUMMARY, NOTES	1 *
58	NORTH & SOUTH BANKS AMERICAN RIVER, UTILITIES & CROSSINGS DATA	2 *
59	NORTH & SOUTH BANKS AMERICAN RIVER, BROKEN PIPE @ APPX 14+180, GENERAL PLAN	
60	NORTH & SOUTH BANKS AMERICAN RIVER, BROKEN PIPE @ APPX 14+180	

STANDARD DRAWINGS

(Attached to SPECIFICATION SECTION: TEMPORARY CONSTRUCTION FACILITIES)

Project Sign	150-25-1186
Sign Details	150-25-1232
Safety Sign	80-25-707
Hard Hat Sign	80-25-774

(End of clause)

252.236-7002 OBSTRUCTION OF NAVIGABLE WATERWAYS. (DEC 1991)

(a) The Contractor shall --

(1) Promptly recover and remove any material, plant, machinery, or appliance which the contractor loses, dumps, throws overboard, sinks, or misplaces, and

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SECTION 01506

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SECTION 01506

REQUIREMENTS AND ISSUES SPECIFIC TO INDIVIDUAL SITES (SECTIONS)

PART 1 GENERAL

This section addresses requirements and issues which are specific to individual sites or sections as opposed to the previous section "General Requirements" which apply to more than one section or site. The requirements on this section are in addition to those in other parts of these specification and plans including but not limited to sheets with the designation "1034-U-(number)" and specification section 01505.

A copy of every document, including but not limited to permits, which are sent to or received from any other entity in pursuit of this work, shall be provided to the Contracting Officer and another copy kept by the Contractor at the site of the work.

As referred to in these plans and specifications, "north" bank of the river refers to the "right" bank and "south" bank refers to the "left" bank. The terms: "reach", "site" and "section" (as referring to a specific work area) are also synonymous. The codes starting with "R" or "L" with another number such as "L2" refer to the reach or site as shown on the drawings and described in these specifications.

"Union Pacific's Western Tracks" refer to the railroad tracks just upstream of Highway 160 (south 4+180). "Union Pacific's Eastern Tracks" refer to the railroad tracks just downstream of Highway Business 80 which are about 1.6 miles upstream of the "Western Tracks" (north 7+376 & south 6+533).

1.1 SITE (OR SECTION)R2 NORTHERN CROSSING OF UNION PACIFIC'S EASTERN TRACKS PLUS UTILITIES (7+338 TO 7+410)

This northern crossing (R2) is on the same track alignment as the southern crossing (L4) paragraph 1.4. The other requirements of the southern crossing shall also apply to this northern crossing. The contractor shall determine schedule and equipment for performing work in a timely manner.

1.1.1 Daily Time Limit

Due to the critical nature of railroad operation, as well as for safety reasons, the Contractor shall notify Union Pacific Railroad (UPRR), Manager of Track Maintenance, a minimum of 10 days in advance of any construction on, along, or across the right of way or tracks. The Manager of Track Maintenance has changed from the person indicated in attachment 3, titled Maintenance Consent Letter. The POC is now Mr. Blaine Peterson (916)789-5311 and not Kevin McQuitty. Paragraph 1.1.5 provides requirements for work within the track zones indicated.

1.1.2 Staging Area

The government has procured staging area 7+350 which is a triangular area bordering tracks and the levee as shown on sheet 1034-C-17. This area serves the work at reach R2. There ~~is~~ are buried fiberoptic cables and liquid petroleum pipeline running in a generally north-south direction and marked on the ground. The Contractor shall place steel trench plating over the pipeline at areas where construction equipment will pass or park or where fill in excess of 0.7 meters will be placed, to provide additional protection for the pipe over and above the existing protective fill. The plating shall be a minimum of five-eighths inch thick steel and span a minimum of 4 feet to each side of the petroleum pipeline. Fill shall be graded under the plates in a manner to evenly distribute loading. No excavation shall occur in the staging area. The Contractor is responsible to protect-in-place these and all existing utilities. See SECTION 1034-02000 MOBILIZATION AND DEMOBILIZATION of these specifications regarding clearing and regrading. See 02730-1.3.4.

1.1.3 Access to Staging Area

The access to the staging area, along the landside toe, as shown on sheets C-16.1, C-16.2 and C-17 narrows between the railroad tracks and the levee near the eastern end of this toe road. The eastern most portion of this access road narrows. To facilitate access and egress of equipment, the Contractor shall fill and regrade the narrow portions as shown on sheet C-19.1 and as described in SECTION 1034-02000 MOBILIZATION AND DEMOBILIZATION of these specifications.

Between the tracks and the public street, the Contractor shall stay on the asphalt road only. The land off the asphalt is private and trespass is prohibited. Access is shared with the City O&M as well as the public. Drivers shall proceed slowly and with care. A flagperson shall be stationed in the zone between the ramp up the levee and the public street as shown on sheet C-19.1.

1.1.4 Permits

Attachment 3 at the end of this section contain a Contractor's Right of Entry Agreement which follows a Maintenance Consent Letter. As per the instructions associated with the permits, the Contractor shall prepare required information, pay all required fees and obtain and abide with all required permits.

A haul road crossing permit shall be obtained as required by SECTION 01500 PROTECTION AND MAINTENANCE OF VEHICULAR, BIKE AND PEDESTRIAN TRAFFIC paragraph 1.5.5 "Construction Access Crossing Railroad Tracks".

As per the instructions associated with the permits, the Contractor shall prepare required information, pay all required fees and obtain and abide with all required permits.

1.1.5 Track Zone

Track zones are based upon distances from the centerline of railroad tracks. There are different requirements when working in different zones.

1.1.5.1 Zone 1

Zone 1 is defined as work within 2.6 meters(8.5 ft) either side of the centerline of the tracks. Trains must be stopped prior to work commencing in this zone. Clearance to work within this track zone shall be requested and approved in advance of any work commencing. UPRR will modify the Contractor request as required to accommodate UPRR operations for the track in question. This modification may include denying any Contractor work in the track zone for the time(s) requested. The Contractor will not receive clearance from UPRR until the week prior to the work commencing. A flag person is required for work within this zone (see paragraph 1.1.6). The flag person communicates with the train dispatcher to stop trains approximately 2 miles from the construction site. For bidding purposes the work in Zone 1 shall be assumed to occur only on Mondays for a maximum time interval of 4 hours and on Sundays for a maximum time interval of 4 hours occurring either in the night or daylight.

1.1.5.2 Zone 2

Zone 2 is defined as work within the strip either side of the tracks between 2.6 meters(8.5 ft) and 7.6 meters(25 ft) from the centerline of the tracks. Trains are not required to be stopped for work proceeding in this zone. Clearance to work within this track zone shall be requested of UPRR and approved in advance of any work commencing. UPRR Form B procedures shall be in effect in this zone. A flag person is required for work within this zone (see paragraph 1.1.6). The flag person communicates with the train dispatcher to slow trains down that enter the construction site. All personnel will be required to be at least 7.6 meters(25 ft) from the centerline of tracks while the train passes through the area. Equipment etc., exclusive of personnel, may remain in place in the zone while the train passes through the construction site. Personnel may return to the equipment after the train passes.

1.1.5.3 Zone 3

Zone 3 is the area outside of zone 1 and zone 2. Zone 3 is defined as the area either side of the tracks greater than 7.6 meters(25 ft) from the centerline of the tracks. Trains are not required to be stopped for work proceeding in this zone. Clearance to work within this track zone shall be requested of UPRR and approved in advance of any work commencing. A flag person is not required for work within this zone.

1.1.6 Flag Person

A railroad mainline crossing is required by the work. The Contractor shall contact Mr. Terry Minarik, Union Pacific Railroad Company, at (402) 997-3587 to obtain a Haul Road Crossing Application. The processing fee is \$550. A copy may also be obtained on the Internet at www.UPRR.com

(<http://www.uprr.com>). The Haul Road Agreement takes 30 days to process. Late request for expedited service cannot be accommodated. The Contractor shall submit a completed application to Mr. Terry Minarik in a timely manner as to account for processing time.

Mr. Terry Minarik
UPRC
1800 Farnam Street
Omaha, Nebraska 68102

The executed Haul Road Crossing Agreement will contain a flag person provision. The Contractor must give Jim Smith, (916) 789-6352 a five day written and confirmed notice to arrange for a Union Pacific Railroad flag person. The Contractor is responsible for the cost of the UPRC flag person at \$350 per day.

The flag person shall be present during all operations crossing at this location and for work within the track zones indicated in paragraph 1.1.5. The Contractor shall cross the tracks with rubber tired vehicles, however a temporary crossing is required. For track mounted equipment, a temporary crossing is required.. No metal parts are allowed to come in contact with the railroad tracks. Any crossing or work in the proximity of these tracks shall be coordinated with Jim Smith at (916) 789-6352 and Mr. Terry Minarik at (402) 997-3587.

The permit application shall be submitted within 3 calendar days from the notice to proceed. The permit shall be obtained within 33 calendar days after the notice to proceed. Delays due to Union Pacific not responding within 30 days shall be immediately reported to the Contracting Officer.

1.1.7 Precast Concrete Panels

The replacement of the asphalt concrete track crossing shall be coordinated with and to the satisfaction of the Union Pacific Railroad (UPRR). The crossing shall be replaced with precast concrete panels. The Contractor shall contact Mr. Blaine Peterson, UPRR at (916) 789-5311. For layout of precast concrete panels see attachment 3.

1.1.8 Temporary Crossing of UPRR Tracks

A temporary crossing will be required for UPRR tracks. The Contractor shall submit for approval, the design for the temporary crossing which shall be provided by the Contractor. This shall include plan and section views, dimensions, materials, hardware and method of attachment. Such design shall be submitted at least 30 calendar days prior to construction.

For bidding purposes see the Rail Protection Detail on sheet C-27. For those locations where there are double tracks, the single track detail shown on sheet C-27 shall be modified for the double track crossings.

1.1.9 Equipment Information

Upon first contact with the UPRR with regard to the temporary crossing, the Contractor shall provide equipment specifications for equipment which will work on or pass over the UPRR tracks. These specifications will include a

list of all equipment and vehicles and include dimensions and weight including approximate axial weights and type of tracking (i.e. pneumatic or steel track) and any other information which may affect rail tracks.

1.1.10 Ballast

Should the grouting operation cause infiltration of the ballast, any hardened cement grout in the ballast shall be replaced with new ballast material. The Contractor shall replace the ballast as indicated in SECTION: LEVEE RESTORATION, EARTHWORK AND ROADWORK, paragraph 2.5 for ballast material and paragraph 3.10 for placement.

1.2 SITE (OR SECTION)L2 SOUTHERN CROSSING OF HIGHWAY 160, LIGHT RAIL PLUS UTILITIES 3+608 TO 3+693

1.2.1 Daily Time Limit

1.2.1.1 Light Rail

The government has eliminated all jet grout injection locations on and within 3.1 meters(10 feet) of the Light Rail track centerline. Work performed more than 3.1 meters(10 feet) from track centerline may be performed daily without limitation, however, a Track Warrant is required. Light Rail has modified the Track Warrant Condition #1, that personnel and equipment be at least 10 feet from the nearest rail, to allow personnel and equipment no closer than 10 feet from track centerline.

The Contractor shall obtain a Track Warrant and/or Red Tag (see paragraph 1.2.7) for each and every shift of Limited or Full Access construction, as defined below. Limited access construction is defined as work to be performed from 1.8 meters(6 ft) to 3.1 meters(10 ft) of the centerline of the track. This work may be performed daily, approximately 12:45AM to 4:15AM.

Full access construction is defined as work occurring on the existing track and within 1.8 meters of the centerline of the tracks. A Red Tag is required. The Contractor shall obtain a Red Tag a minimum of 10 days prior to commencing full access construction. A separate Red Tag is required for each shift. Construction for the sump pit and cleanout shall utilize equipment which will operate beneath the minimum 3.1 meter (10-foot) clearance zone around the 900 volt DC powerline. For this condition, work can be performed daily, approximately 12:45AM to 4:15AM. See also the attached "Contractor Safety Information" sheets of the Sacramento Regional Transit District which follow this section and paragraph 1.2.7.

1.2.1.2 Caltrans

The time for working on any lane of the roadway is limited as per the attached California Department of Transportation encroachment permit.

1.2.2 Staging Area

The government has procured staging area 3+650 which is an area in the median between the east and west bound lanes, and area 3+520 which is at the end of a private street which abuts the levee. These areas are shown on sheets 1034-C-4 and 1034-C-3.1 respectively.

1.2.3 Permits

Attachment 1 at the end of this section contain the following dealing with the State of California, Department of Transportation (Caltrans): Encroachment Permit, Lane Closure Chart, Traffic Control System Standard Plans, and Definitions.

Attachment 4 contains the Sacramento Regional Transit District: Contractor Safety Instructions and other associated information.

The Contractor shall obtain and submit the latest versions of permit forms. As per the instructions associated with the permits, the Contractor shall prepare required information, pay all required fees and obtain and abide with all the provisions, requirements and stipulations of the above and all required permits.

Caltrans encroachment permits may also be available at:
<http://www.dot.ca.gov/hq/traffops/developserv/permits/applications/>

1.2.4 Traffic Control, Stipulations and Considerations for Work on Highway 160

This paragraph (1.2) describes special provisions for Highway 160 construction operations. These shall be considered and incorporated as appropriate by the Contractor in preparing the Traffic Control Plan (see SECTIONS 01500-1.5 and 01505-1.4 and 1.24). Prior to start of construction on the Highway, the Contractor shall contact the appropriate people as shown on sheets 1034-U-1 and 1034-U-2.

The Contractor shall also notify the following of any disruption of normal traffic. This requirement is in addition to any other notification requirements cited in these plans and specification such as sheets 1034-U-1 and 1034-U-2.

Sacramento City Police (within City limits) (916) 264-5471
(24 hours)

Sacramento County Sheriff (outside City limits) (916) 874-5115
(24 hours)

Sacramento City Fire Marshall (916) 264-5266
(M-F/8 a.m. - 5 p.m.)

California Highway Patrol (916) 263-3550 (day)
(916) 445-2211 (24 hour dispatch)

The Contractor shall place signs, facing approaching traffic in order to safely direct traffic. During work, a "K" rail or equivalent physical barrier shall be placed between the lane and the Contractor's work area. In the event there is a conflict between the requirements of the Caltrans permit and these specifications, the more stringent shall apply as determined by the Contracting Officer.

Construction Operation Traffic Circulation: For construction at this site, the Contractor shall use only haul roads as shown on sheet C-3.1 and C-4. Any modification or additional haul roads shall be approved by the Contracting Officer.

1.2.5 Utilities

The utilities crossing the jet grout wall as shown on sheet 1034-U-2 and as indicated in specification section 1034-02730 shall be protected-in-place. An exception are the irrigation lines which may, at the Contractor's option, be cut and temporarily by-passed during the jet grouting work. If by-pass is done, irrigation unavailability shall never exceed 72 hours from October 15 through March 15 or 12 hours from March 16 through October 14.

If utilities are under the pavement as determined by Underground Service Alert markings or direct notification, particular care and hand excavation shall be utilized in the vicinity of the utilities, to safely expose such utilities during the excavation of the trench as shown on sheet C-21 and described on sheet U-2 and specification section 02333. The cut through the pavement shall be sawcut clean and vertical.

The trench shall not be excavated earlier than 4 days prior to drilling or grouting. Repaving shall not occur more than 3 days following, notification by the Contracting Officer that the grout cuttings are adequately cured. See sheet 1034-C-21 note 3 regarding minimum time. Steel plates intended for such use shall cover all trenches except while actively drilling or grouting at the immediate area. Signs and barricades with flashing lights shall warn drivers of the work or the covered trenches at all times. The road adjacent to the excavation shall be kept clean to avoid creating a skid hazard. See also specification 1034-02333-3.9 and 1034-C-21.

1.2.6 Equipment Information

1.2.7 Stipulations and Considerations for Work on and near Light Rail Tracks

1.2.7.1 Temporary Relocation of Overhead Lines

The Relocation of the signal cable will be accomplished by Regional Transit forces contracted separately by the government. Regional Transit will not disconnect the line but will attach it to a temporary pole. The signal

cable includes both communication and 240 volt AC lines. The temporary pole shall be installed by the contractor. It shall be located no closer than 10 feet from the contractor's drill rig and approximately centered between the cable supports on either side of the jet grout location. The pole shall extend a minimum of 30 feet above ground and an additional 10 feet into the ground. Regional Transit shall be contacted a minimum of 7 days in advance of signal cable relocation and pole location coordinated at that time. Regional Transit will utilize a tie back that forms a 'Y' connecting to the cable at two points approximately 12 feet apart and connecting the remaining leg to the pole. Upon completion of the jet grouting, Regional Transit shall be contacted to place the cable in its original location. Seven (7) day notice is required. The contractor is responsible for removal of the temporary pole including backfill and disposal of the pole. The contractor may leave the signal cable in place if a minimum of 1 foot clearance from the side and bottom of the cable can be maintained at all times to any portion of the contractor's equipment. THE 900 VDC LINE is located above track centerline and shall remain active.

1.2.7.2 Temporary Crossing

1.2.7.3 Surveillance of Drain Line

The Contractor shall perform surveillance of the four (4) inch diameter drain line parallel to tracks, by installing a pipe cleanout 3 meters up grade of the jet grouting. The train overhead power line will not be shutoff. All excavation to install this cleanout shall occur at a time when no trains are scheduled. No open excavation shall exist adjacent to the tracks from one hour prior to the first morning train to the last train of the day. All material removed to access this drain shall be completely replaced and compacted in the existing manner and configuration a minimum of one hour prior to the next scheduled train passing. Pre-construction survey using video camera shall be performed 15 meters (50 feet) upstream and downstream of the pipe cleanout. Water shall be introduced near the drain during the pre-construction survey and water emerging into the drain shall be observed by the camera. A sump pit shall be installed 4 meters down grade of the jet grouting shown on sheet C-22. The connection to the pit and the existing 4 inch diameter drain pipe shall be made using a pipe 6 inches or greater in diameter. The sump pit shall be located no closer than 3.1 meters (10 feet) from the nearest rail. Details of the connection and construction of the sump pit and cleanout shall be submitted to the Contracting Officer at least 30 days prior to construction for approval. During the jet grouting shown on sheet C-22, the drain shall be monitored with video camera. The video camera shall be located within one meter of the cleanout. If during jet grouting the flow of cuttings is observed, the jet grouting shall stop immediately and corrective action shall be taken immediately to prevent further migration into the ballast. Upon completion of jet grouting, the contractor shall restore the 4 inch diameter drain pipe and surrounding area to its original condition.

1.2.7.4 Ballast

Should the grouting operation cause infiltration of the ballast, any

hardened cement grout in the ballast shall be replaced with new ballast material. The Contractor shall replace the ballast as indicated in SECTION: LEVEE RESTORATION, EARTHWORK AND ROADWORK, paragraph 2.5 for ballast material and paragraph 3.10 for placement.

1.2.7.5 Track Warrant and Red Tag Requirements

Track Warrants and Red Tags shall be obtained by contacting Metro Control at (916)648-8415. The Contractor shall fill out and submit Light Rail Track Warrant and the Red Tag Form and submit to Regional Transit directly with a simultaneous copy to the Contracting Officer.

The Contractor shall obtain a Track Warrant for each and every work shift. Up to seven consecutive work days can be included on each Track Warrant form. Each day, however, requires a unique authorization number. Track Warrants must be submitted a minimum of 24 hours in advance of work commencing. See appendix 4 for "Track Warrant" and "Instructions for Track Warrants" for additional requirements and other pertinent information. The Contractor shall state in the "Light Rail Track Warrant" for trains to slow to 5 mph while passing over the work area during curing of jet grout bodies.

1.2.7.6 Work Plan

A Work Plan detailing actual anticipated hours of work, construction methods, and activities shall be submitted to the Regional Transit and the Contracting Officer for approval as per the "Contractor Safety Instructions" which follow this section in attachment 4.

1.2.7.7 Miscellaneous

No object shall extend more than 4" above the top of rail.

The Contractor and all of its subcontractors are responsible to undergo Worker Environmental Awareness Program (WEAP) training. This training takes approximately fifteen minutes and is provided by Regional Transit.

1.2.8 Costs of Dealing with Light Rail

1.2.8.1 Track Warrant Estimated Cost

The government has eliminated all jet grout injection locations on and within 3.1 meters (10 feet) of the Light Rail track centerline. If work requires trains to be stopped, the RT organization may suffer economic harm estimated at a cost of \$8,000 TO \$12,000 per week-end, even greater cost during the week or \$3,500 per hour beyond specified work hours (estimates provided by RT and not validated by the Government). Bidders may wish to consult legal counsel as to their potential liability in this matter.

1.2.8.2 Limited Access Construction

Track Warrants for limited access construction, when Light Rail service is not disrupted, shall be issued without cost to the Contractor.

1.2.8.3 Full Access Construction

The initial Track Warrant for full access construction shall be accompanied with a service disruption(sururity) bond in the amount of \$50,000 naming Sacramento Regional Transit as beneficiary (see paragraph 1.2.8.1 for bond exposure).

1.2.8.4 Red Tag Fee

The fee for the "Red Tag Form" is Two Hundred Fifty Dollars (\$250)per shift which the Contractor shall pay directly to the Regional Transit.

1.3 SITE (OR SECTION)L3 SOUTHERN CROSSING OF UNION PACIFIC'S WESTERN TRACKS PLUS UTILITIES (4+167 TO 4+213)

1.3.1 Daily Time Limit see paragraph 1.1.1. The contractor shall determine schedule and equipment for performing work in a timely manner.

1.3.2 Staging Area

The government has procured staging areas 4+100 as shown on sheet C-7.

1.3.3 Permits

Attachment 3 at the end of this section contain: a certificate of insurance, a Contractor's Right of Entry Agreement, and a Maintenance Consent Letter.

A haul road crossing permit shall be obtained as required by SECTION 01500 PROTECTION AND MAINTENANCE OF VEHICULAR, BIKE AND PEDESTRIAN TRAFFIC paragraph 1.5.5 "Construction Access Crossing Railroad Tracks".

As per the instructions associated with the permits, the Contractor shall prepare required information, pay all required fees and obtain and abide with all required permits.

1.3.4 Track Zone

Reference paragraph 1.1.5 regarding the definition of, and special requirements for work in the track zone.

1.3.5 Flag person see paragraph 1.1.6

1.3.6 Temporary Crossing of UPRR Tracks

See paragraph 1.1.8.

1.3.7 Equipment Information

See paragraph 1.1.9.

1.3.8 Ballast

See paragraph 1.1.10.

1.4 SITE (OR SECTION)L4 SOUTHERN CROSSING OF UNION PACIFIC'S EASTERN TRACKS PLUS UTILITIES (6+501 TO 6+550)

This southern crossing (L4) is on the same track alignment as the northern crossing (R2) paragraph 1.1. The other requirements of the northern crossing shall also apply to this southern crossing. The contractor shall determine schedule and equipment for performing work in a timely manner.

1.4.1 Daily Time Limit see paragraph 1.1.1

1.4.2 Staging Area

The government has procured staging area 6+700 as shown on sheet C-11. No excavation shall occur in the staging areas.

1.4.3 Permits

Attachment 3 at the end of this section contain: a certificate of insurance, a Contractor's Right of Entry Agreement, and a Maintenance Consent Letter.

A haul road crossing permit shall be obtained as required by SECTION 01500 PROTECTION AND MAINTENANCE OF VEHICULAR, BIKE AND PEDESTRIAN TRAFFIC paragraph 1.5.5 "Construction Access Crossing Railroad Tracks".

As per the instructions associated with the permits, the Contractor shall prepare required information, pay all required fees and obtain and abide with all required permits.

1.4.4 Access

Access to this site may be made from the waterside passing below the railroad bridge as shown on sheet 1034-C-10 if all vehicles and equipment can safely clear the bridge and access occurs 16 April to 31 October. If access occurs outside this time period, the Contractor shall have secured all permits required to pass over the railroad tracks as described in this paragraph. The Contracting Officer retains the right, without an increase in contract cost, to stop access under the bridge if he or she deems that such access poses a danger to the structure, or equipment driver. As per 1034-02730-1.3.2 The Contractor is responsible for any damage to the bridge or any other public or private facility.

1.4.5 Track Zone

Reference paragraph 1.1.5 regarding the definition of, and special requirements for work in the track zone.

1.4.6 Flag person see paragraph 1.1.6

1.4.7 Temporary Crossing of UPRR Tracks

See paragraph 1.1.8.

1.4.8 Equipment Information

See paragraph 1.1.9.

1.4.9 Ballast

See paragraph 1.1.10.

1.5 SITE (OR SECTION)L4A 24" SEWER @ 6+608 TO 6+638

This is a County owned sewer pipe buried in the levee. See sheet 1034-U-2. The interior of the pipe shall be videotaped during the jet grouting operation around the exterior.

1.5.1 Videotaping Pipe Interior

The Contractor shall arrange to videotape the interior of this sewer for the purpose of establishing that exterior grouting has not breached the walls or joints of the pipe and to take immediate measures should such be observed during grouting.

The camera shall be submersible and mounted on a crawler. There shall be a monitor installed in a vehicle from which real time observation may take place and simultaneously recorded on tape. Resolution shall be such that a leak of grout material into the pipe will be noticed immediately. View shall cover the entire internal circumference either simultaneously or by remote control from the surface. All equipment shall be of the type typically used by plumbers. The Contractor shall supply the Contracting Officer with the original videotape on either a VHS or CD format within 24 hours following the work.

The Contractor shall arrange with the County point of contact to access the pipe through an air valve.

1.6 NORTH BANK ABANDONED PIPE BROKEN AT CENTER TO BE FILLED WITH CONCRETE 14+180

During placement of the slurry wall, an abandoned 12" diameter steel cylinder concrete encased pipe was broken by the excavator due to mislocation. Soil-cement-bentonite backfill was placed and is now assumed to have taken a configuration as shown on sheets 1034-U-4 and 1034-U-5.

The Contractor shall completely fill the two remaining segments by pumping each segment with Controlled Low Strength Material as follows:

Controlled low strength material (CLSM) shall be as defined in ACI 229R and shall consist of lean slurry of Type II Portland cement blended with size number 8 coarse rounded aggregate conforming to the requirements specified in ASTM C 33. The Contractor may elect to increase the flow-ability by using fly ash as the aggregate filler. CLSM shall have a 28-day compressive strength between when tested in accordance with ASTM D 4832. CLSM shall have a hydraulic conductivity of or less when tested in accordance with ASTM D 5094 for 28-day aged samples.

10 days prior to placement, the Contractor shall submit a certification of CLSM. This certification shall state that testing has concluded that the material to be placed is in conformance with the requirements of this paragraph. During pumping of material, the Contracting Officer shall be entitled to take a maximum of 0.03 cubic meters (one cubic foot) of material from the batch as a testing sample at no additional cost.

1.7 MEASUREMENT AND PAYMENT

There shall be no measurement made for the purpose of payment for the work described in this section. Payment for the work required by this section, except for sites L4 and L4A, shall be included in the lump sum price for the individual section (site) for which the work is done. Such price schedule items are as follows:

"SITE L2 MOBILIZATION AND DEMOBILIZATION INCLUDING FENCING"
(See paragraph: 1.2.8 "Costs of Dealing with Light Rail" for issues which may affect payment for site L2).

"SITE L3 MOBILIZATION AND DEMOBILIZATION INCLUDING FENCING"
"SITE R2 MOBILIZATION AND DEMOBILIZATION INCLUDING FENCING"
"FILL TWO HOLLOW SECTIONS OF BROKEN PIPE AT 14+180"

The costs for sites L4 and L4A shall be included in the pricing schedule item under specification 1189: "MOBILIZATION AND DEMOBILIZATION INCLUDING FENCING" which shall include all the required work. See Specification 1189 Section 02000 .

The bid items shall include the complete cost of work specified in Sections 1034-02000 and 1189-02000 "MOBILIZATION AND DEMOBILIZATION" as well as all work required by other sections of this contract as specified from such other sections to be included in these price schedule items.

1.8 SUBMITTALS

Government approval is required for all submittals with a "G" designation; submittals not having a designation are for information only. The following shall be submitted in accordance with Section 01330 SUBMITTAL PROCEDURES:

SD-01 Preconstruction Submittals

Work Plan

Light Rail Track Warrant

Red Tag Form

the design for the temporary railroad crossing

Details of the connection and construction of the sump pit and cleanout

SD-07 Certificates

A copy of every document

original videotape

certification of CLSM

SD-03 Product Data

equipment specifications

PART 2 PRODUCTS (NOT USED)

PART 3 EXECUTION (NOT USED)

-- End of Section --

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SECTION 02730

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SECTION 02730

UTILITIES

PART 1 GENERAL

1.1 REFERENCES

The most current edition of the publications listed below form a part of this specification to the extent referenced either in these specifications or in the plans. The publications are referred to by basic designation only.

ARMY CORPS OF ENGINEERS

EM-385-1-1	Army Corps of Engineers - Safety Manual
EM-1110-2-1913 cptr 8	Army Corps of Engineers - Engineering Manual

ASBESTOS CEMENT PIPE PRODUCERS ASSOCIATION (ACPPA)

ACPPA-01	(1988) Recommended Work Practices for A/C Pipe
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CITY OF SACRAMENTO

City Standard Specifications	Standard Specifications for Public Works Construction
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NATIONAL FIRE PROTECTION ASSOCIATION (NFPA)

NFPA 49	(1994) Hazardous Chemicals Data
NFPA 325M	(1991) Fire Hazard Properties of Flammable Liquids, Gases, and Volatile Solids
NFPA 704	(1990) Identification of the Fire Hazards of Materials

STATE OF CALIFORNIA

"Reclamation Board Title 23"	California Code of Regulations
Public Utility Commission	General Orders

1.2 BASIC PURPOSE

There are existing pipes, cables, conduits and other utility line crossings which occupy the same zone where the cutoff wall is to be placed. Such

pipes, cables, conduits or any utility line crossings shall be protected-in-place with the exception of irrigation lines which shall be temporarily bypassed. Methods and procedures as described in these plans and specifications shall be utilized.

Cutoff wall construction is a continuous operation. Utilities require accommodation which must occur prior to and subsequent to cutoff wall work. Drawings U-(reference number) itemize data regarding the various crossings.

Conduits damaged by jet grouting could lead to catastrophic property loss and possibly loss of life during periods of high river flow. Damage might remain unnoticed until a high river event. Damage can also cause other immediately noticable dangerous and/or expensive situations. Some of the utilities to be protected in place during jet grouting include but are not limited to a 12 inch liquid petroleum pipe and several fiberoptic communications cables.

Certain locations such as road overcrossings and utility undercrossings were specifically reserved for this jet grouting work and excluded from the previous slurry work due to the more facilitative nature of jet grouting.

The Contractor shall make every effort to protect all existing facilities and crossings.

1.3 GENERAL REQUIREMENTS

1.3.1 Coordination

The contractor is required to contact and coordinate with the utility owners. All utility service both overhead and buried shall be uninterrupted by this work.

The Contractor shall obtain any Permits from Utility Owners Where Required by owners and submit copies of these to the Contracting Officer a maximum of 2 calendar days following receipt from the permitting agency. See also paragraph 3.2 of this section regarding preconstruction meetings.

The Contractor shall provide the Contracting Officer a copy of all correspondence with representatives of utility owners.

If during the process of coordination with utility owners, the contractor is informed by such owners of requirements which differ from these plans and specifications, the Contractor shall notify the Contracting Officer as soon as possible following such notification. The Contracting Officer will investigate and will direct the Contractor if a modification is required.

The term "owners or "owning agency" refer to the "agency of ownership operation and maintenance" as shown on sheets U-2 and U-3 and their respective POC's on sheet U-1.

1.3.2 Protect-in-Place

Some requirements related to utilities are shown on but not limited to: specification 1034/1189, SECTION 01506, REQUIREMENTS AND ISSUES SPECIFIC TO

INDIVIDUAL SITES (SECTIONS) and the drawings.

If a cuttings trench exposes a utility which remains during the jet grouting process, special precautions shall be taken to protect such utility from any kind of damage from the jet grouting process, equipment or any other extraneous equipment or exposure including vandalism from the public during off hours. The Contractor shall submit to the Contracting Officer a description of the method to protect all lines he intends to use. If the pattern and location of jet grouted columns must be altered from that required by this contract to avoid an existing line, the Contractor shall notify the Contracting Officer as soon as the situation is discerned.

Existing siphon valves, air valves, vaults, manholes, pipes, guy wires, paving, and other existing structures and features shall remain in place and shall be protected-in-place unless the owning agency permits otherwise in writing. In such an event the Contractor shall provide a copy of any and all such permits to the Contracting Officer. The government has made no arrangements for alterations other than as specifically shown on these plans and specifications and does not anticipate that any additional accommodations are necessary. Measures which require covering, shoring and/or bracing or bridging shall be taken to prevent damage.

If irrigation lines must be severed, the contractor shall notify the Contracting Officer 10 (ten) days in advance of severing such lines (or any activity which damages such lines) so the Contracting Officer can arrange with private owners to temporarily shut off systems. Specification 1034/1189, SECTION 01506, subparagraph 1.2.5 regarding maximum length of time irrigation may be unavailable applies to any irrigation lines encountered.

If additional information from a utility owner indicate a cable, conduit or other utility line deeper than six meters and whose depth is not shown on sheet U-2, a determination shall be made as to the nature of the outer protective encasement of such deep conduit, cable or line. If existing encasement is deemed by the Contracting Officer to offer inadequate protection from jet grouting, additional protective measures may be ordered by the Contracting Officer.

Particular care shall be taken excavating from the levee crest to cables which the owners have indicated is unprotected. It is expected that most of the fiberoptic cable is unprotected.

If additional information from a utility owner indicate a cable, conduit or other utility line deeper than six meters and whose depth is not shown on sheet U-2, a determination shall be made as to the nature of the outer protective encasement of such deep conduit, cable or line. If existing encasement is deemed by the Contracting Officer to offer inadequate protection from jet grouting, additional protective measures may be ordered by the Contracting Officer.

Measures to protect all crossings from damaging equipment loading shall be

enacted and such plans and procedures submitted to the Contracting Officer. Crossings include any utility, overhead or underground, road, track, structure or facility. Note that this is especially critical if some existing cover over the pipe is removed and the surface is exposed to equipment traffic.

No separate payment will be made for protecting-in-place any existing facility or improvement. The Contractor shall be responsible for damage to any facility damaged by the Contractor or their Sub-Contractor.

The cost of protecting facilities or improvements, except for sites L4 and L4A, shall be included in the bid price for "(site name) MOBILIZATION AND DEMOBILIZATION INCLUDING FENCING" where "(site name)" is the location appurtenant to the work. The cost for L4 and L4A shall be included in specification 1189 "MOBILIZATION AND DEMOBILIZATION INCLUDING FENCING"

If it is necessary to temporarily remove guy wires, the cost of contacting the power or communication pole owners shall also be included as noted above.

For active pipe and conduits around which jet grouting will occur, the Contractor shall invite the presence of the utility owners during cutoff wall construction and request from such owners access to the nearest upstream (of pipe) shutoff in the event an unexpected urgent shut off is needed.

No planned outages or deactivations of any pipe, cable, line, conveyance or conduit has been arranged or anticipated by the government and none shall be assumed by any bidder.

1.3.2.1 Warning Posts

All existing warning posts shall be protected-in-place unless it is necessary to temporarily remove a warning post in order to accomplish the work required. In such an event, the Contractor shall so inform both the utility owner and the Contracting Officer during the notifications required by this contract. Arrangements will be made to establish witness points for replacement. No warning posts shall be removed unless by a representative of the owning utility or by specific permission of the utility.

1.3.3 Late Discovery and Incorrect Inventory

If the Contractor at any time becomes aware of an unlisted utility or other unanticipated obstacle, or incorrect information regarding existing facilities; the contracting Officer shall be informed within eight hours.

This includes but is not limited to: lines noted by Underground Services Alert, lines denoted by signs on site but not listed in these plans or specifications, evidence of lines as denoted by visible evidence such as risers, exposures of a line at a nearby location but not shown in these plans or specifications and notification by a third party of the existence

of a line which is not shown in these plans or specifications. The Contractor shall report, as soon as practical, and no longer than 12 hours any such additional information implicating unlisted lines to the Contracting Officer.

The discovery of information which corrects information given in these plans or specifications shall also be reported to the Contracting Officer as soon as practical and not longer than 12 hours from the discovery.

Any facility encountered beyond what is shown in the contract documents shall be accommodated as directed by the Contracting Officer. If incorrect information in these plans or specifications causes a delay or additional work, an adjustment in payment shall be made in conformance with CHANGES AND CHANGED CONDITIONS and DIFFERING SITE CONDITIONS clause of the CONTRACT CLAUSES.

1.3.3.1 Asbestos or other Restricted Material

The government has no information indicating that any pipe material in this contract is made of, or partially made of, or partially coated with, asbestos. There are, however, some pipes passing through the levee, in the general area which records do indicate contain asbestos as a partial coating.

If any pipe, conduit or other crossing is exposed which is suspected of being constituted with asbestos or any restricted material, the Contractor shall promptly notify the Contracting Officer.

1.3.4 Staging Areas

No excavation shall occur on any staging area.

The existing fill over all utilities in the area shall be maintained. Additional fill shall be placed at areas which are over any utility and where the ground is lower than the surrounding ground due to settlement or erosion so as to create a uniform, smooth cover.

The Contractor shall confirm the location of utilities prior to laying out a plan for staging area use. The Contractor shall submit for approval, plans regarding staging area layout to avoid utilities at staging areas and/or to provide protection.

1.3.5 Overhead transmission or communication lines

Overhead wires exist at several locations. The government has not arranged for nor can the government guarantee that any line can be deactivated to accommodate this work. Bidders and the Contractor shall consider accommodating all lines in an active, uninterrupted manner. No separate payment will be made for the cost of additional safety and other precautions required while passing under or working in the vicinity of these lines.

1.4 MEASUREMENT AND PAYMENT

No measurement for payment will be made for accommodating utilities.

Payment for the work required by this section **except** for site excavation to determine precise location and position and except for sites L4 and L4A shall be included in the lump sum price for the individual section (site) for which the work is done. Such price schedule items are as follows and are as listed in specification 1034/1189, SECTION 00010, subparagraph 1, "Pricing Schedule":

"SITE L2 MOBILIZATION AND DEMOBILIZATION INCLUDING FENCING"
"SITE L3 MOBILIZATION AND DEMOBILIZATION INCLUDING FENCING"
"SITE R2 MOBILIZATION AND DEMOBILIZATION INCLUDING FENCING"
"FILL TWO HOLLOW SECTIONS OF BROKEN PIPE AT 14+180"

The cost of work required by this section for sites L4 and L4A, shall be included in the bid price for: specification 1189 "MOBILIZATION AND DEMOBILIZATION INCLUDING FENCING"

Payment for the work required by this section for site excavation to determine precise location and position shall be included in the lump sum price for the individual section (site) for which the work is done. Such price schedule items are as follows and are as listed in specification 1034/1189, SECTION 00010, subparagraph 1, "Pricing Schedule":

"SITE L2 SITE EXCAVATION TO DETERMINE PRECISE LOCATION AND POSITION"
"SITE L3 SITE EXCAVATION TO DETERMINE PRECISE LOCATION AND POSITION"
"SITE L4 SITE EXCAVATION TO DETERMINE PRECISE LOCATION AND POSITION"
"SITE L4A SITE EXCAVATION TO DETERMINE PRECISE LOCATION AND POSITION"
"SITE R2 SITE EXCAVATION TO DETERMINE PRECISE LOCATION AND POSITION"

All bid items shall include the complete cost of labor, equipment and material to perform the work required as well as all other work required by other sections of this contract. The bid items for site excavation for utilities shall include all utilities listed at the site.

1.4.1 Included in Bid Items

Payment for the bid items: "SITE nn MOBILIZATION AND DEMOBILIZATION INCLUDING FENCING" where nn is the site designator, shall include compensation for all the work required to meet the requirements of this section as well as work required by other parts of these plans and specifications and shall include but not be limited to: all preliminary work, contacting and coordination with utility owners, Underground Services Alert, the Corps of Engineers and the California Reclamation Board,

obtaining permits from owners where required, setting up and attending preconstruction conferences, submittal of data as required, cost in pursuit of providing details not shown, and preparation for emergencies.

Also included are: installation and removal of all by-passes for irrigation lines, and protecting-in-place all features and facilities such as but not limited to: pipe, pipe bedding and collars, valves, valve boxes and manholes.

Also included are: videotaping where required as shown on sheet U-2 and all earthwork including excavation, backfill, and compacting backfill.

Payment for the bid items: "SITE nn DETERMINATION OF PRECISE LOCATION AND POSITION" where "nn" is the site designator, shall include compensation for the costs of potholing and exploratory excavation in advance of work to confirm and/or, if necessary, add to or modify data shown in this contract. The cost of the procedure called for by the column: as shown on sheet U-2 and paragraph 3.3 of this section is also included in these bid items as indicated above in 1.4 MEASUREMENT AND PAYMENT.

If any entity the Contractor is required to coordinate with demands payment, the Contractor shall notify the Contracting Officer within 24 hours and provide appropriate information to include: the entity, the person contacted, and the payment requested by the entity.

Note that a significantly greater amount of work is required in some of the preceeding payment items than required by this section. See specification 1034 SECTION 02332 JET GROUT CUTOFF WALL, paragraph: "Measurement and Payment" also other sections have work paid for under these items.

1.5 SUBMITTALS

Government approval is required for all submittals with a "G" designation; submittals not having a designation are for information only. The following shall be submitted in accordance with specification 1034/1189, SETION 01330, SUBMITTAL PROCEDURES:

SD-07 Certificates

Permits from Utility Owners Where Required

copy of all correspondence with representatives of utility owners.

SD-01 Preconstruction Submittals

description of the method to protect all lines

Measures to protect all crossings

inventory of information determined from potholing

photos or videotape

Durable Metal Sign

SD-05 Design Data

plans regarding staging area layout

PART 2 PRODUCTS (NOT USED)

PART 3 EXECUTION

3.1 Notifications

The Contractor shall make all the notifications required by these plans and specifications including: Underground Services Alert (USA) 1-800-227-2600 (in a manner and timeliness as required by state law), the Contracting Officer and the owners of the utilities (as required by these plans and specifications). If, following a notification, a schedule changes or a refinement in schedule made, the Contractor shall renotify the person or people originally contacted. The Contractor shall reinform as more precise work times become available.

3.2 Preconstruction Meetings

The Contractor shall arrange and hold preconstruction meetings which will include: the Contracting Officer's representative, a representative of the California State Reclamation Board, the utility owner's representative for each utility in this contract, and the Contractor. Multiple meetings may be required as all utilities may not be able to get together at once. These meetings should resolve scheduling and establish a coordinated procedure. The initial contacts for these meetings shall occur a minimum of 30 calendar days prior to the scheduled start of any work which may affect utilities. The contacts for the utilities are shown on sheet U-1. The locations are shown in plan view on the orthophoto/plan sheets and listed on the inventory sheet U-2.

These preconstruction meetings do not preclude the requirements for notification as shown elsewhere in these plans and specifications. Notification requirements, however, may be satisfied at the preconstruction meetings if the meeting is in the required time frame and notification is made.

3.3 Determination of Precise Location & Position

See also sheet U-2.

3.3.1 Use of Location Instrumentation

Prior to and during excavation to precisely locate crossings, the Contractor shall utilize a magnetometer or other instrument approved by the Contracting Officer as a preliminary locator. Most crossings have a metallic component and will register with a magnetometer.

If there exist pipes which are accessible at some point but too deep to expose and whose precise location cannot be confidently determined by other methods, the Contracting Officer may require the Contractor to utilize radio detection methods to establish precise location.

Other instrumentation may be utilized if approved by the Contracting Officer.

3.3.2 Use of Excavation to Establish Location

Potholing is included with with "determination of Precise Location & Position" as shown on sheet U-2.

Potholing shall occur prior to any excavation for a cuttings trench or any other exploratory excavation or any other work at the site. Note by the depth of burial as shown on sheet U-2 that some but not all crossings will be exposed by the cuttings trench excavation.

The Contractor shall carefully excavate to expose the top half of each crossing to be exposed and confirm the information on the drawings. Exposure shall occur where and as described on sheet U-2. Care shall be exercised to avoid damaging the crossing. Potholing shall verify the depth, diameter, type and existing condition.

The Contractor shall not rely exclusively on the pipe and conduit physical properties information given in these plans and specifications. Potholing shall confirm material existing at the site.

Excavation shall meet the requirements of SECTION 02333 LEVEE RESTORATION, EARTHWORK AND ROADWAYS of these specifications as well as that shown on the plans. Any excavation to a crossing shall be backfilled as per section 02333. Note the requirements of this section and drawings regarding typical excavation at pipe crossings which are always in effect.

Potholing shall occur a minimum of ten calendar days prior to any work around the conduit.

3.3.3 Notifications

Underground Service Alert (USA) shall be notified sufficiently in advance of work, and as required by law, so that utilities may be marked prior to any work.

The Contracting Officer and the owning utility shall be informed a minimum of ~~three~~fourteen calendar days prior to the start of excavation to determine the precise location and position of utilities so the Contracting

Officer or utility representative may witness such work. The date and time of day for excavation to expose a utility shall also be provided.

If the potholing is not witnessed by the Contracting Officer, the Contractor shall report findings to the Contracting Officer within eight hours of discovery. The Contractor shall photograph each crossing after exposure. An inventory of information determined from potholing shall be assembled by the Contractor and submitted to the Contracting Officer along with photos upon completion of potholing. This inventory shall include missing or corrected information from that shown on sheet U-2 The Contractor shall also provide any information already obtained upon request of the Contracting Officer. See subpart "Late Discovery and Incorrect Inventory" in part 1 of this section.

3.3.4 Payment

No additional payment will be made if USA (Underground Service Alert) or any other entity show a different location for a listed utility prior to exploratory excavation.

No additional payment will be made if any part of a utility conduit as discovered during exploratory excavation is within ~~five~~ seven meters horizontally or one meter vertically from the location given on sheet U-2 or as modified by Underground Service Alert. ~~as discovered during exploratory excavation.~~ For utilities without a burial depth given on sheet U-2, no additional payment will be made if the utility is within two meters ~~one and one-half meters~~ of the levee crest.

3.4 Emergency Procedures

Excavation of the levee shall be as brief as possible. The Contractor shall be capable of restoring the levee as indicated on specification 1034/1189, SECTION 01505, GENERAL REQUIREMENTS 1.12.2 and specification 1034, SECTION 02333 LEVEE RESTORATION EARTHWORK AND ROADWAYS.

The Contractor shall provide the Contracting Officer at least 2 emergency contacts available 24 hours a day with the authority and capability to act in such an emergency situation. Should such a situation occur, additional payment to the Contractor will be determined as per the Contract Clauses. Failure to adequately reconnect in a timely manner could cause flooding of residential areas.

3.5 General Procedures

Particular care shall be taken not to damage the coating or lining of any pipe or conduit. If the coating or lining of any pipe or fitting is damaged, the owner of the pipe as well as the Contracting Officer shall be notified within 3 hours. The Contractor shall be responsible for the cost of repairing any damage to any conduit including the coating.

The Contractor shall videotape or photograph all pipes and conduits immediately following exposure of the area to be grouted around and provide the Contracting Officer a copy of such photos or videotape within 6 calendar days.

3.5.1 Shoring and Bracing

See SECTION 02333 regarding shoring and bracing.

3.6 Markers

Electronic marker tape, and 2 surface marker signs shall be placed at each crossing location.

3.6.1 Ribbon

Plastic marking tape shall be acid and alkali-resistant polyethylene film, 152 mm (6 inches) wide with minimum thickness of 0.10 mm (0.004 inch). Tape shall have a minimum strength of 12 MPa (1750 psi) lengthwise and 10 MPa (1500 psi) crosswise. The tape shall be manufactured with integral wires, foil backing or other means to enable detection by a metal detector when the tape is buried up to 1 meter (3 feet) deep. The tape shall be of a type specifically manufactured for marking and locating underground utilities. The metallic core of the tape shall be encased in a protective jacket or provided with other means to protect it from corrosion. Tape color shall be as specified in TABLE 1 and shall bear a continuous printed inscription describing the specific utility.

Marker ribbons shall be placed at a depth of 0.5 meters below the finished grade and directly above the crossing.

TABLE 1. Tape Color

Red:	Electric
Yellow:	Gas, Oil, Dangerous Materials
Orange:	Telephone, Telegraph, Television, Police, and Fire Communications
Blue:	Water Systems
Green:	Sewer Systems

3.6.2 Permanent Utility Marker Signs

A permanent, Durable Metal Sign shall be placed at the land side toe of each underground crossing. Along the American River place at the fence line or 9 feet from the toe where there is no fence. Along the Sacramento river place one to three feet from the land side toe. Angle signs to face upward toward the crest so it may be read from the crest. including abandoned lines left in place. Signs shall face the crest to permit reading from the crest. These signs shall be larger than 6 inches by 8 inches and smaller than 9 inches by 11 inches. The post shall be included and the bottom of the sign shall be between 12 inches and 15 inches above final grade.

The post shall be 4" x 4" pressure treated wood placed a minimum of 18" below the ground surface with the fill compacted around it.

Signs shall be similar to Caltrans G-11-1 except for size. Solid block all capitals black lettering on white background shall be used.

Drawings showing details of the sign and certification that it meets the requirements of Caltrans G-11-1 shall be submitted for government approval.

The information shown on the example sheet following this section shall be placed in indelible printing standard for public outdoor signs.

Place only one sign per station. Where several utilities are grouped together list all the material conveyed or utility types on the same sign. Indicate "emergencies call 911" in larger lettering.

Text shall be proportional and appropriate abbreviations may be used. A sample sketch showing manufacturer details shall be submitted for approval.

Where several pipes or conduits are grouped in close proximity to each other and serve the same entity, one sign shall be used with information on all the crossings.

-- End of Section --